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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,455

Applicant(s)

MATES, JOHN W.

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is comprised of two paragraphs. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claims 15-18 are objected to because of the following informalities:

In claims 15-18, Applicant uses the terms "photodetector elements" and "photodetector" interchangeably to refer to the same elements, thus there are antecedent basis problems. Examiner recommends using consistent terminology.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 10, 11, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Clarke (U.S. Patent 6,057,538).

Regarding claims 1, 2, 10, 11, 19 and 20, Clarke discloses (see Figure 7) an apparatus and method, comprising: a plurality of photodetector elements (22) disposed on a semiconductor substrate (20); and a compound light directing member (30) including a plurality of light directing elements (32), at least some of the light directing elements to individually direct light energy from one or more sources onto one or more

of the photodetector elements, the compound light directing member being the primary mechanism to direct light energy into the one or more of the photodetector elements, outputs of the photodetector elements being electrically coupled such that an image associated with one or more sources may be synthesized at output circuitry, or to integrate outputs of the photodetector elements to produce an image corresponding to the source. Clarke also discloses (see Figure 7) the compound light directing member comprises a lenslet array (30) and the light directing elements each comprise a lenslet (32). Since the apparatus images, the elements of the apparatus together provide a substantially planar, artificial, compound eye.

5. Claims 1, 3, 4, 10, 12, 15-17, 19 and 21, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Lopez (U.S. Patent 5,517,019).

Regarding claims 1, 3, 4, 10, 12, 15-17, 19 and 21, Lopez discloses (see Figures 1 and 8) an apparatus and method, comprising: a plurality (see Figure 8) of photodetector elements (18) disposed on a semiconductor substrate (106); and a compound light directing member (bundle of 12 in 111) including a plurality of light directing elements (12), at least some of the light directing elements to individually direct light energy from one or more sources onto one or more of the photodetector elements, the compound light directing member being the primary mechanism to direct light energy into the one or more of the photodetector elements, outputs of the photodetector elements being electrically coupled such that an image associated with one or more sources may be synthesized at output circuitry, or to integrate outputs of the photodetector elements to produce an image corresponding to the source. Lopez also

discloses (see Figure 8) the compound light directing member comprises light pipe bundle (bundle of 12 in 111) and the light directing elements each comprise a light pipe (12). Lopez further disclose (see Figure 8) a first and second light pipe receiving light from a first and second direction as claimed. Since the apparatus images, the elements of the apparatus together provide a substantially planar, artificial, compound eye. In addition, Lopez further discloses (see column 5) determining from which angles and which point sources light energy is directed to associated photodetector elements integrated on a single substrate using a compound exposure determining member (group of 10 in 111). Lopez also discloses (see Figures 1 and 8) using a lenslet array (array of 16) or a light pipe bundle (bundle of 12).

6. Claims 1, 5-10, 13-15, 18, 19 and 22, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Fisher (U.S. Patent 5,929,440).

Regarding claims 1, 5-10, 13-15, 18, 19 and 22, Fisher discloses (see Figures 1 and 11) an apparatus and method, comprising: a plurality of photodetector elements disposed on a semiconductor substrate; and a compound light directing member (shielding array) including a plurality of light directing elements (see Figure 1), at least some of the light directing elements to individually direct light energy from one or more sources onto one or more of the photodetector elements, the compound light directing member being the primary mechanism to direct light energy into the one or more of the photodetector elements, outputs of the photodetector elements being electrically coupled such that an image associated with one or more sources may be synthesized at output circuitry, or to integrate outputs of the photodetector elements to produce an

image corresponding to the source. Fisher also discloses (see Figure 1) the compound light directing member comprises a plurality of micromachined light directing elements, each of the elements including an opening (see Figure 1B; at 18) and micromachine circuitry to control an orientation of at least some of the elements relative to the surface of the substrate, the orientation of each of the elements determines the light energy received by the photodetector elements. Fisher further discloses (see Figure 11) a first set of elements is controllable to be different than the relative directions of a second set of elements. Since the apparatus images, the elements of the apparatus together provide a substantially planar, artificial, compound eye. In addition, Fisher further discloses (see Figure 13) determining from which angles or directions and which point sources light energy is directed to associated photodetector elements integrated on a single substrate using a compound exposure determining member.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Application/Control Number: 10/028,455
Art Unit: 2878

Page 6

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
August 26, 2003



Thanh X. Luu
Patent Examiner